

**IN THE CLAIMS:**

- 1           1. (Original) A radiation applicator for applying electromagnetic radiation to tis-  
2           sue, comprising:  
3           an axial central conductor adapted to be coupled to a source of electromagnetic  
4           radiation and defining an axis;  
5           an elongate dielectric member, the dielectric member surrounding at least part of  
6           said central conductor along an axial length thereof;  
7           a metal ferrule, the ferrule being attached to the dielectric member and surrounding  
8           a portion of the central conductor and extending parallel thereto along a length thereof.
- 1           2. (Original) The applicator of claim 1, wherein the ferrule and the dielectric  
2           member have respective elongate cooperating surfaces and wherein the ferrule and the  
3           dielectric member are fixed to each other with said cooperating surfaces in close abut-  
4           ment, thereby providing a rigid structure.
- 1           3. (Original) The applicator of claim 2, wherein the cooperating surfaces include  
2           respective radially extending cooperating surfaces.
- 1           4. (Currently amended) The applicator of claim 2 ~~or 3~~, wherein the cooperating  
2           surfaces include respective annular cooperating surfaces.
- 1           5. (Currently amended) The applicator of ~~any of the preceding~~ claims 2, further  
2           comprising:  
3           a disc shaped tuning conductor, attached to the central conductor and in electrical  
4           contact therewith;  
5           wherein the shape and dimensions of the tuning conductor, and the shape and di-  
6           mensions of the dielectric member, are predetermined whereby a radiating dipole is

7 formed, in use, for radiating electromagnetic energy in at least a radial direction from said  
8 dielectric member.

1 6. (Currently amended) The applicator of ~~any of the preceding~~ claims 2, further  
2 comprising:  
3 an elongate metal tube surrounding a portion of the central conductor spaced apart  
4 from the part surrounded by the dielectric member;  
5 wherein the ferrule is fixedly attached on opposing respective sides thereof to the  
6 dielectric member and to the metal tube; and wherein the central conductor comprises the  
7 inner conductor of a cable extending within the metal tube, an elongate annular space be-  
8 ing defined between the cable and the metal tube so as to permit the passage of cooling  
9 fluid to at least the ferrule.

1 7. (Original) The applicator of claim 6, wherein at least one set of holes is pro-  
2 vided in the tube, each hole extending through the wall of the tube, thereby providing  
3 conduits for the flow of fluid between the annular space and the exterior of the applicator.

1 8. (Original) The applicator of claim 7, wherein the holes extend radially.

1 9. (Currently amended) The applicator of claim 7 ~~or 8~~, wherein 1 to 4 holes per  
2 set, ~~and preferably 2 holes per set~~, are provided.

1 10. (Currently amended) The applicator of ~~any of~~ claims 7 ~~to 9~~, wherein the holes  
2 are diametrically opposed.

1 11. (Currently amended) The applicator of ~~any of~~ claims 7 ~~to 10~~, wherein two or  
2 more sets of holes are provided, and the sets of holes are spaced apart axially.

1 12. (Currently amended) The applicator of ~~any of~~ claims 7 ~~to 11~~, wherein the  
2 holes are 0.1 to 0.6 mm in diameter, ~~and preferably 0.5 mm in diameter~~.

1           13. (Currently amended) The applicator of ~~any of claims 7 to 12~~, wherein the  
2       holes are disposed a minimum of 3 to 50 mm, ~~and preferably 12 mm, from the end of the~~  
3       ~~tube that abuts the ferrule.~~

1           14. (Currently amended) The applicator of ~~any of the preceding claims 1~~,  
2       wherein the dielectric member is formed with an end blade, whereby the blade has a di-  
3       mension of elongation transverse to said axis.

1           15. (Currently amended) The applicator of ~~any of the preceding claims 1~~,  
2       wherein the external diameter of the dielectric member, the ferrule and/or the metal tube,  
3       is less than 2.5 mm, ~~and is preferably 2.4 mm.~~

1           16. (Currently amended) A radiation application assembly, comprising:  
2       ~~the applicator of any of claims 6 to 13, or claim 14 or 15 when dependent on any~~  
3       ~~of claims 6 to 13,~~  
4       a radiation applicator for applying electromagnetic radiation to tissue, the radiation  
5       applicator including  
6               an axial central conductor adapted to be coupled to a source of electro-  
7       magnetic radiation and defining an axis,  
8               an elongate dielectric member, the dielectric member surrounding at least  
9       part of said central conductor along an axial length thereof,  
10              a metal ferrule, the ferrule being attached to the dielectric member and  
11       surrounding a portion of the central conductor and extending parallel thereto  
12       along a length thereof, and  
13              an elongate metal tube surrounding a portion of the central conductor  
14       spaced apart from the part surrounded by the dielectric member,  
15              wherein the ferrule and the dielectric member have respective elongate  
16       cooperating surfaces and wherein the ferrule and the dielectric member are fixed

17        to each other with said cooperating surfaces in close abutment, thereby providing  
18        a rigid structure, and  
19                the ferrule is fixedly attached on opposing respective sides thereof to the  
20        dielectric member and to the metal tube; and wherein the central conductor com-  
21        prises the inner conductor of a cable extending within the metal tube, an elongate  
22        annular space being defined between the cable and the metal tube so as to permit  
23        the passage of cooling fluid to at least the ferrule;  
24        a fluid conduit connected to a source of cooling fluid via a pumping device;  
25        wherein the fluid conduit is also connected to the metal tube at a position thereon spaced  
26        apart from the end thereof that abuts the ferrule;  
27                wherein the pumping device is operable, in use, to supply cooling fluid at a prede-  
28        termined rate to the annular space via the fluid conduit.